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Risk Communication in the Age of COVID-19

Isabell Koinig

Abstract

Literature describes a pandemic as a unique form of health crisis, which requires intensive communicative efforts. The government is a key actor in such situations for it is not only particularly trusted to manage a crisis, but also can obtain compliance on part of the affected population. Scholars agree that health messages are important tools to create awareness for the (health) threat. Particularly during health emergencies, information on which preventive measures should be taken is most valuable. With measures often concerning “disruptive actions”, messages must be carefully crafted to counteract negative emotions and controversial arguments. The present chapter presents a checklist for successful campaign design in health risk situations by paying specific attention to COVID-19. To this end, we conduct an extensive literature review and highlight how scientific information should be presented, as well as which message appeals and design features should be utilized to provide the population with targeted and timely information. This is essential against decreasing health literacy rates, which have to be considered in the message design process. To illustrate our case, we will refer to selected national health campaigns which were successfully utilized to manage the risk associated with the COVID-19 pandemic. The chapter will conclude with some limitations and directions for future research.

Keywords: health risk communication, COVID-19, health campaigns, health message design, literature review

1. Introduction

A pandemic presents a special kind of health crisis that requires “collective responsibility” together with changes in communication techniques ([1], p. 515). Previous research has confirmed that communication during a health crisis is crucial [2] in order to create awareness for the existence of a health threat [3, 4]. Hence, health risk messages disseminated during the crisis should be both instructing and adjusting, informing the public of which precautionary measures to take to reduce physical harm and the virus from spreading, while also providing individuals with guidance as to how to deal with the psychological threats of the crisis [5].

In the event of a pandemic, the government becomes a key actor in managing the (health) crisis [6, 7]. Conditioned by high degrees of trust, messages distributed on part of the government can drive the general population to comply with its recommended actions [8–11]. This is the case, since health messages for which the government is the identified source are perceived as both credible and relevant [7, 12], for individuals are convinced that the government can control the crisis [13]. This is

in line with previous research, which suggests that controllability and responsibility for the health threat influence the public's risk perceptions and, consequently, responses to these risks [14].

The primary aim of this chapter is to present some guidelines for effective health risk message design, drawing input from established crisis communication literature in general and some recent studies on COVID-19 risk communication in particular. To this end, recommendations regarding message presentation and design will be presented, before limitations and directions for future research are addressed.

2. Communicating during a health crises

Pandemics qualify as a form of health crisis [1]. As crises present situations for which individuals are neither prepared nor possess knowledge of how to deal with the uncertain circumstances [15], they actively seek support and guidance [16, 17]. In order to mobilize the affected public as a partner [18, 19], individuals' need for information must be satisfied. Useful information is usually based on scientific facts. Following the Office and Science and Technology [20], science communication comprises all communication activities between different stakeholder groups, and, as in the case of a health crisis, takes place between "the government and the public". In line with Burns et al. [21], one of the many objectives of science communication is to raise awareness for and create familiarity with new aspects of science. Consisting of three separate processes – i.e. communication, consultation and participation [22] – science communication needs to be designed strategically to fill existing (knowledge) gaps and present information in an appealing manner [23]. Only this way, the public's understanding of science can be assured [21]¹.

Media messages afford individuals with instruction and, thus, present respondents' primary sources of information in crises [26–28]. Message credibility and trust is elevated, if the government is the identified source [12, 29], highlighting its central role in the crisis management process [6, 7]. On the one hand, it can help sensitize people for the risks associated with the crisis and, on the other hand, encourage them to adopt preventive measures [30]. For this reason, governmental officials are advised to invest in "well-coordinated health communications" to assist individuals in managing their daily lives in times of upheaval [31]. Previous studies have investigated how the public responds to a government's overall health risk communication, for instance during the avian influenza [12], SARS [32], or Ebola [33]. Findings confirm that the government is perceived to be in the position to mitigate potential health risks [13].

In the event of a crisis, governments are advised to engage in intensified communication [9, 10]. In order to build community trust and engagement, communication must be open and transparent, as well as scientifically based in order to facilitate the public's preparedness to deal with the health threat [9, 16, 34]. This call seems to be expressive of recent social developments towards a knowledge or information society [35]. Thereby, knowledge (re)production centers on documented scientific knowledge (e.g., scientific findings), which no longer solely has its origin in natural sciences but is also based on social sciences [29]. Moreover, this kind of knowledge is increasingly discussed in the media. While science communication is concerned with raising awareness for and creating familiarity with new aspects

¹ The arguments presented in this chapter build on a "Public Understanding of Science" and "Public Awareness of Science", both of which attest to the general public's attitudes, behaviors, or opinions towards science and scientific knowledge [24, 25].

of science (as part of a “Public Understanding of Science” and “Public Awareness of Science”, [24, 25]), messages disseminated during any (health) crisis need to be designed strategically to present information in an appealing manner in order to draw respondents to (scientific) message content [21].

3. Health campaigns in crisis situations

Effective risk communication is a requirement in case of health emergencies and crises [2] and can assist the public in managing the crisis [36]. Health crises, including epidemics and pandemics, do not present an exception to this trend. For this reason, governments throughout the world heavily depend on health campaigns, described as “a systematic effort to change health behaviors (or attitudes and beliefs about health and/or social and environmental conditions that mediate health behaviors) within a target population of people who are at risk for a health problem or problems” [37]. Health messages by the government are also known as Public Service Announcements (PSAs, [38]). Contrary to traditional advertising messages, these materials set out to change individual behaviors. For this reason, they have been commonly used in health crises [39].

With PSAs appealing to individuals to change their behaviors and instructing them on how to achieve these proposed behavioral changes, they are in line with health campaigns’ three communicative objectives: awareness, instruction or persuasion [37, 40]. In case of a health crisis, health campaigns primarily intend to raise awareness for the severity of the threat amongst the affected population and offer instruction to individuals on how to utilize self-protective measures [41, 42]. As such, PSAs appeal to individuals’ self-efficacy [16, 43, 44]. For instance, health messages spread during the H1N1 influenza emphasized the need to take up hygiene measures, such as “hand washing, sanitizer use, covering of coughs and sneezes, and staying at home” ([16]: p. 5). Similar message content was also employed as part of national COVID-19 health campaigns.

Albeit different campaign themes exist, amongst them community building [16], messages typically center on risk reduction strategies [5, 30]. Particularly during health emergencies, information on which preventive measures should be taken is valuable [45]. These measures, for instance, could be nonpharmaceutical interventions (NPIs), which are nation-wide actions proposed by the government to resolve the health crisis [31]. NPIs are useful in controlling the pandemic and are, thus, often labeled “community mitigation strategies”. With measures often concerning “disruptive actions” ([44], p. S2), individuals are forced to reconfigure their daily lives and routines [46]. For this reason, health risk messages must be carefully designed to prevent controversial arguments and negative emotions from surfacing [19, 47, 48].

Campaigns advocating NPIs rely on media messages to reach diverse publics in crisis situations [49]. While an increasing amount of research is available on how health messages are used to create awareness amongst the population during risk situations [33, 50–53]. In this chapter we review articles pertaining to health risk message design and focus on the special case of pandemics and emerging infectious diseases [8].

4. Method

The purpose of this paper is to present the cumulated results of an excessive literature review, looking at propositions for and examples of health risk messages

disseminated during previous epidemics and pandemics, as well as during COVID-19. Hence, this review will only include articles from the field of risk communication and health communication which were released between 2000 and 2020, even though parallels to messages addressing ongoing pandemics, such as HIV/AIDS and Cholera, can be found.

We used keywords such as risk, health risk, risk communication, health communication, epidemic, pandemic and a combination thereof to compose our sample. With this scope in mind, we conducted a search using national library databases. We covered the major journals in strategic communication, risk communication, and health communication, such as *The Journal of Risk Research*, *Environmental Research*, *The Journal of Business Research*, *The Journal of Public Relations Research*, *Public Relations Review*, *The European Journal of Communication*, *Public Health*, *Health Communication*, *The Journal of Health Communication*, *Health Education and Behavior*, *The Journal of Allergy and Clinical Immunology*, *The Journal of Communication in Healthcare*, *The Journal of Health Management*, *The American Journal of Public Health*, *The Journal of Urban Health* and *Public Understanding of Science*. From these sources, we limited our selection to articles dealing with any type of health crisis, including Zika, Ebola, H1N1, the avian influenza and COVID-19. We screened them to a list of 115 pertinent references on health risk communication and message design, which constituted our sample.

With the above considerations we have now summed up some recommendations for designing health risk messages. For government officials, it is now of great interest to learn more about how health risk messages can be designed to benefit not only their own agenda, but also whole populations affected by crisis situations. After reviewing relevant (and recent) literature, it becomes obvious that scholars have devoted their research to studying communication during crisis situations in detail. In the following, several recommendations for designing and drafting health risk messages will be presented.

5. Recommendations for designing health risk messages

5.1 Be open and transparent

The availability of timely and transparent information allows the public to derive at a realistic assessment of the health threat [3, 4, 54]. Building on previous research, messages disseminated in times of disruption should “[e]mphasize the rationale and importance of adherence to public health measures that some people may consider intrusive (e.g., quarantine)” (US Department of Health and Human Services 2008). Providing a solid reasoning is seen as paramount, given that in recent years, individuals trust in the validity of scientific findings has decreased considerably [55]. Hence, PSAs must address the necessity for specific crisis mitigation strategies and actions.

5.2 Focus on relevant message content

Experts have determined that ensuring public access to information – and thus engaging in a process of constant communication – is seen as essential in crisis situations [56]. Thereby, different forms of information need to be distinguished: instructing information, preventive information, and reactive information [57]. Instructing information covers three areas: information on the pandemic, the public’s primary needs, and precautionary measures [57]. Through preventive information, public opinion regarding the crisis is sensitized, whilst through reactive information,



Figure 1.
Austrian PSAs advising grandparents to refrain from visiting their grandchildren (left) and social distancing (right). (Source: <https://www.bmkoes.gv.at/>).

the affected population is informed about the crisis progression, and a potential panic and the spread of rumors can be prevented [1]. For instance, public health campaigns in Austria, Australia and the U.S. (New York) highlighted the necessity to either stay at home, socially distance or wear masks. For instance, the example in **Figure 1** emphasizes the necessity to cut back on visits from grandparents or social distancing.

5.3 Present information consistently and “straight to the point”

In the process of encouraging individuals to follow the proposed preventive actions [58–60], information should be presented in a straight-forward manner [16] and in “one voice”. Moreover, messages should use simple language [61], and be consistent in terms of message content, as inconsistency can lead to confusion and undesired health outcomes: “A well-crafted national message [has] the potential to build unity around the goal of defeating the virus through behavior change, preferably with clear, unambiguous recommendations of what actions to take” ([61], 1736). For example, when the crisis first surfaced, the Austrian government stressed the importance of staying home; after the first lockdown, when social distancing was in order, the campaign commonly referenced the baby elephant as a metaphor to remind individuals to keep their distance (of 1.5 m; see **Figure 2**).

5.4 Appeal to individuals’ self-efficacy

According to Fishbein and Ajzen [62], effective communication should stress which behaviors have to be changed, further providing the public with clear instruction as to how this change can be obtained [3]. Therefore, message should appeal to individuals’ self-efficacy [63, 64]. Self-efficacy is activated if identification with message content is high [43, 44]. Clear communication can boost individual self-efficacy and help mitigate the risks associated with the health threat [61]. If individuals feel empowered, this can then improve the relationship between the public and the government lastingly [10]. Governments throughout the world familiarized individuals with how they could contribute to preventing the virus from spreading, e.g. through personal hygiene, reducing their social contacts, or self-isolating. Examples of Australian campaign resources are presented in **Figure 3**.



Figure 2.
Austrian PSAs featuring the baby elephant. (Source: <https://www.bmkoes.gv.at/>).



Figure 3.
Australian PSAs presenting risk mitigation strategies. (Source: <https://www.health.gov.au/resources/>).

5.5 Align message content with social norms

As individual behavior is influenced by social norms, i.e. how people in one’s immediate environment react [66], health communication messages should promote these norms [29, 39], which can induce behavioral change. Besides the relevance of collective norms² [67], norms that require personal investment (e.g., social distancing, personal hygiene) are presumed to predict behavioral intentions even more strongly [68]. *Apart from stressing individual benefits, governments also highlighted how individual actions would contribute to the overall social good (e.g., “Let’s be COVIDSAFE together” in Australia or “Because your mask doesn’t protect you. It protects me” as part of the Mask Up America Campaign; see Figure 4).*

5.6 Use prosocial appeals

The risks associated with any crisis have been renowned to elicit negative emotions in individuals [69], further influencing their risk perceptions [70–72]. Therefore, the negative emotions associated with the pandemic should be

² Collective norms describe “prevailing codes of conduct that either prescribe or proscribe behaviors that members of a group can enact” ([66], p. 29).



Figure 4.
Prosocial Appeal as part of #MaskUpAmerica. (Source: <https://www.idsociety.org/public-health/covid-19/>)



Figure 5.
Austrian PSAs emphasizing prosocial and collective action, such as staying at home if feeling unwell (left) and shopping for at risk groups (right). (Source: <https://www.bmkoes.gv.at/>).

counterbalanced with positive emotional appeals [29, 73]. This, for instance, can be achieved through “prosocial motivation” or a collective orientation, in the course of which the positive impact of a certain behavior on the community elicits hope in recipients [74, 75]. Likewise, higher intentions to comply with proposed behaviors can be achieved if prosocial appeals are used [76]. *In addition to the examples mentioned above, also the Austrian and German government emphasized the need for collective action (e.g. Austria’s Schau auf Dich, Schauf auf Mich campaign and Germany’s #besonderehelden video campaign; see Figure 5).*

5.7 Emphasize the necessity of proposed measures

Besides stressing the necessity for engaging in selected NPIs, messages also must point out why it is essential to do so [3, 77]. This builds upon previous research, which has demonstrated that increased efficacy levels are reliable in predicting individual behavior [78]. One potential way, for instance, could be to increase the perceived



Figure 6.

#MaskUpAmerica featuring Everyday Heroes. (Source: <https://www.governor.ny.gov/>).

relevance of message content or the similarity to the source, which have proven successful in mitigating negative message consequences [79–81], e.g., the spread of the virus.

5.8 Evoke positive emotions

Individuals' risk perceptions usually incorporate emotional aspects [53] that have been found to drive individuals to take up protective behaviors in crisis situations [82–84]. Hence, the use of (positive) emotion has been found to be conducive to behavioral change [85], also in times of crisis, where emotions have been found to drive (health) risk message reception, e.g., by impacting individuals' willingness and motivation to take up precautionary measures (e.g., [86–89]). *Positive emotions can be evoked, for instance, by presenting individuals as heroes, as it is the case in both the German public health campaign and the New York #maskupamerica campaign (see Figure 6).*

5.9 Emotionalize message content

While some audiences seek out facts and scientific information, others are more drawn to emotional and personalized message content [37]. Thereby, message appeals describe promotional cues that are used to drive both recipients' interest and attention [90]. While *informative appeals* utilize rational arguments in a matter-of-fact presentation [91], *emotional appeals*, on the other hand, are based on images or videos to facilitate comprehension amongst message recipients [92]. Emotional appeals allow organizations to gain support from the affected public in times of crisis [93–95], and researchers have identified a number of advantages associated with the use of an emotional message presentation, such as an increased “attention to messages, recall, positive attitudes, and compliance to recommended behaviors” ([37]: p. 249). *In this context, stories or personal recounts are recommended, and have been employed in numerous countries, such as Austria, the U.S. and Germany.*



Figure 7.
Austrian PSAs featuring individuals in their domestic settings. (Source: <https://www.governor.ny.gov/>).

5.10 Employ strong visuals

Health risk communication’s reliance on an emotional (visual) presentation might stem from the fact that visuals drive risk perceptions more than factual information [96, 97]. In case of strong emotional reactions, individuals’ likelihood to ignore factual information is increased [98, 99]. Therefore, the use of pictures is recommended and can increase the likelihood of a message receiving fixation [100]. For example, the Austrian government decided to feature individuals in their domestic environments when encouraging them to stay at home (see **Figure 7**).

5.11 Create Identification

As pandemics evoke negative emotional responses – first and foremost, fear [29] - that affect whole populations, crisis communication itself should not only center on people [101] but also familiarize them with proper behavior, e.g., by featuring role models [102, 103]. If identification is high, people are driven into compliance, which can positively effect crisis management [104, 105]). Governments have featured a number of role models in their campaigns, including health-care workers (U.S.), or celebrities (as narrators in the U.S.).

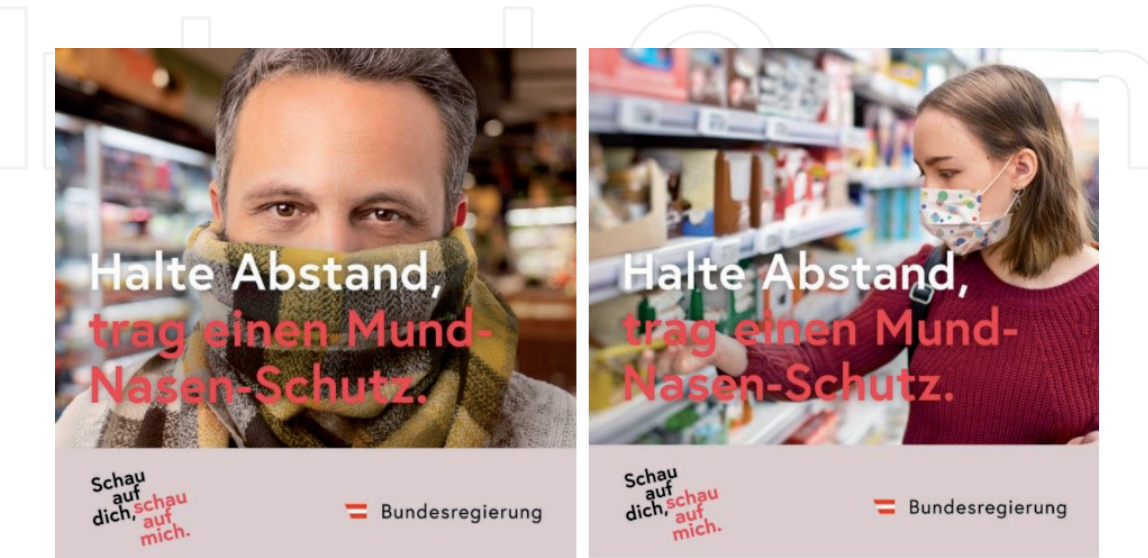


Figure 8.
Austrian PSAs with strong visuals but low in complexity. (Source: <https://www.governor.ny.gov/>).

5.12 Feature community members

Besides medical experts or celebrities [39], a number of studies has highlighted the importance of featuring nonpolitical sources, whose statements are perceived as credible and trustworthy [77, 106, 107]. For instance, people have been found to easily relate to individuals who are similar to them (i.e. “community ambassadors”; [16]). Previous research has been able to demonstrate that similarity with the testimonial featured in a promotional or risk message can be a useful tool to increase message effectiveness [108, 109], as well as message credibility and acceptance [110]. As they resemble real people, individuals are also more likely to follow their lead and take up proposed behaviors [111]. *This strategy has been employed in several countries, including the U.S., Germany, and Austria (for examples, see Figure 7 above).*

5.13 Take individual health literacy levels into account

Messages also must be reflective of individuals’ respective health literacy levels³ [48, 72, 114]. Numerous studies determined individual’s health literacy is rather low [48, 114–116]. “Barriers that keep the people we want to become more scientifically literate from understanding what we do [is that] they do not know the terminology”. For this reason, messages must ensure that people do not feel overwhelmed with the information they are presented with. *Governments seem to have taken this advice to heart by predominantly broadcasting simple messages, such as it was the case in Austria, Germany, and Australia.*

5.14 Reduce message complexity

While low health literacy levels can result in unintended health outcomes [51], messages low in complexity can enhance both individuals’ message processing and willingness to act on the recommendations presented therein [51]. More complex messages, however challenge individuals as they require more elaborate health literacy skills for individuals to not only understand the message, but also align message content with existing knowledge [117]. *Examples for reduced and simplified messages can be found for Germany, Austria, as well as for UNICEF and FIAF, who heavily relied on visual (instructive) information. For examples from Austria, see Figure 8.*

5.15 Present information in dual mode

Health campaigns have been found to increasingly rely on videos [118], which present information in dual form, meaning in both textual and visual form. In the first instance, facts can be both presented in written and auditory form (voiceover or narration) and might be supported by illustrations and pictograms (e.g., [51]). Narration particularly caters to individuals with low health literacy levels, who can process spoken information more readily than written information [119]. Personal stories that are directly linked to the health-cause and narrated by testimonials, can increase identification and message impact [108, 110]. Videos’ dual-mode presentation information processing and message recall [120, 121]. *For example, campaign videos in Germany and Austria were dubbed, while textual information was complemented with pictograms in Austria and Australia (see Figure 9).*

³ In general, *health literacy* is defined as an individual’s ability to process and comprehend health information [112]. A More broadly speaking, health literacy encompasses individuals’ reading and writing skills, their ability to distinguish relevant from irrelevant information as well to critically analyze and reflect upon the information retrieved [113].



Figure 9.
 Austrian PSAs utilizing information and pictograms. (Source: <https://www.governor.ny.gov/>).

5.16 Tailor information to individual needs

If individuals act upon the proposed actions by the government depends on the impact – both in economic and social terms – associated with the health risk [18, 44], as well as their ability to make sense of the information they are presented with [122]. Governments are, therefore, advised to tailor their communications to individual information needs [123–125]. *In Austria, for example, campaign messages differed, depending on the message’s designated target group (e.g., elderly at-risk people, general population, etc.).*

5.17 Utilize switch buttons

According to previous research, individual message preferences vary, and different message formats are preferred [16, 54]. For this reason, messages must be provided where individuals are likely to encounter them [126, 127], taking generational differences and media preferences into consideration. *For instance, campaign messages in Austria and Germany concluded with links to the Government’s website, where additional information could be retrieved.*

6. Conclusion

If crisis strikes, government officials are called upon to act quickly and engage in increased communication [6, 7]. The present study reviewed some existing literature and combined it with insights from health communication, in an attempt to provide some recommendations for effective COVID-19 health risk message design. This is crucial, for individuals’ risk perceptions have been found to predict their likelihood of engaging in preventive behaviors, also in the case of pandemics [82] and in the case of emerging infectious diseases (EID) [8].

At any time during the crisis, message complexity should be reduced [122, 128]), requiring lesser cognitive capacities on behalf of individuals to process message [51]. This is specifically important, if scientific evidence is presented. Only if message match the audience’s cognitive capacities, individuals can play an active role in managing health risks. Moreover, visual (affective) stimuli can elicit emotions in individuals, and enhance message acceptance and learning, specifically if new information is presented [121].

Communication strategies are further recommended to take audiences’ attitudes and inherent needs for comprehensive and instructional information – which

appeals to their self-efficacy [43] – into account [129]. Hence, government officials are advised to optimize message presentation, especially when the problem or risk addressed in this message affects whole populations. As such, it is important to increase both the identification with and the relevance of message content, evoking individuals into compliance. In order to increase identification and create familiarity with proper crisis behavior, communication should center on the affected population [18, 80, 104] and feature community members [43]. In order to increase message comprehensibility, information needs to be presented in simple language and in a straight-forward-manner, while also reducing message complexity [100, 120], e.g., through the inclusion of visuals. If message content is too complex, effectiveness can be enhanced by presenting information in dual form, i.e. by combining visual/auditory and textual elements [51]. For instance, narration can increase a message's persuasive impact [130], while also aiding respondents' identification with the message [131]. A dual-more presentation can thus help overcome respondents' potential resistance to message content [132], while also favoring those with low health literacy rates – a problem, that still challenges health communication in the age of COVID-19 [48, 114].

There are several limitations to the list of recommendations presented herein. Even though the study is based on a comprehensive literature review, it only focused on research articles from the field of strategic communication and health communication. Moreover, the national campaign examples only offer insights into the communication strategies utilized by the German, Austrian, U.S. American (New York) and Australian government. PSAs might be conceptualized differently in other parts of the world. Future research should also emphasize how campaign messages have changed as the COVID-19 pandemic progressed.

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